

## REMARKS

### I. Introduction

Previously, applicant argued that applicant narrowed applicant's claims in an "aspect" that is "germane to the prior art rejection" (see MPEP § 1412.02; In re Clement, 131 F.3d 1464 (Fed. Cir. 1997)), and that applicant's reissue claim differ materially in scope from the surrendered claims. The Examiner effectively contends, however, that since applicant added the term "virtual device driver" in prosecution that the absence of the term conclusively prohibits reissuance under the recapture doctrine. The Examiner appears to believe that since a limitation was added in prosecution to overcome that prior art rejection, that nothing else could be pertinent to that prior art rejection. Effectively, this means that absence of the term added precludes a claim under the recapture doctrine.

Applicant disagrees. Applicant submits that the recapture inquiry does not end when it is determined that a limitation added in prosecution has been removed in a reissue claim. The courts have indicated that other aspects may be relied on to support a reissue where elements added in prosecution are removed in the reissue, as long as the reissue claims are not just "narrower in another aspect completely unrelated to the rejection."

Thus, applicant maintains that, even though applicant added the "virtual" modifier in "virtual device driver" and argued that the virtual device driver was a basis for patentability in the claims of the Original Application, applicant is entitled to pursue different claims relying on different aspects for patentability via this broadening reissue. Applicant demonstrates why these different aspects are *not completely unrelated* to the prior art rejection and specifically that the addition of limitations relating to the power management of configurable devices *is pertinent* to the prior art rejection (see § III.B,

*infra*). Finally, applicant demonstrates that added *overlooked* limitations provide *material narrowing* of the claims (*see* § III.C, *infra*).

#### An Example

In response to a particular prior art rejection, an applicant may pursue many different avenues to distinguish the prior art. Take the following simplified example:

Original claim: A, B

Amended, issued claim: A, B, C (C added in response to prior art rejection)

Proposed Reissue claim: A, B, D

The recapture doctrine does not preclude applicant from removing the limitation C and replacing it with limitation D as long as limitation D makes the claim materially or substantially narrower than the original claim (A, B). The courts have also considered evidence of whether limitation D was an “overlooked” aspect of the invention in prosecution of the original case.

The fact that C was added during the original prosecution seems to imply that C is an element that relates to or is germane to the prior art rejection. Thus, C is germane to the prior art rejection. However, C is only one element that is germane to the prior art rejection. There may have been many different limitations that could have been added (e.g., D), that could have overcome the prior art rejection, and could have patentably distinguished over the prior art. The practitioner is not penalized by the recapture doctrine for hanging his hat on limitation C. Rather, if there is another narrowing aspect of the invention that could have also overcome the prior art rejection, that aspect may be relied upon for patentability and is not barred under the recapture doctrine.

## II. Overlooked Limitations Can Replace Limitations Added In Prosecution

The approach described above (accepting A, B, D as outside the recapture doctrine) was recently validated by the Federal Circuit in Hester Indus. v. Stein, Inc., 142 F.3d 1472 (Fed. Cir. 1998). In Hester, the court concluded that subject matter can be surrendered by argument and that the surrendered subject matter had crept back into the reissue claims in that case (a situation akin to this case, at least for the purposes of this argument). However, the determination that the surrendered subject matter had crept back into the claims did not end the recapture inquiry. The Court went on to state:

Finally, because the recapture rule may be avoided in some circumstances, we consider whether the reissue claims were materially narrowed in other respects. See, e.g., Mentor, 998 F.2d at 996, 27 U.S.P.Q.2D (BNA) at 1525 ("Reissue claims that are broader in certain respects and narrower in others may avoid the effect of the recapture rule."); Clement, 131 F.3d at 1470, 45 U.S.P.Q.2D (BNA) at 1165. For example, in Ball the recapture rule was avoided because the reissue claims were sufficiently narrowed (described by the court as "fundamental narrowness") despite the broadened aspects of the claims. 729 F.2d at 1438, 221 U.S.P.Q. (BNA) at 296. In the context of a surrender by way of argument, this principle, in appropriate cases, may operate to overcome the recapture rule when the reissue claims are materially narrower in other overlooked aspects of the invention. The purpose of this exception to the recapture rule is to allow the patentee to obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects.

Hester, at 1483-4 (emphasis added).

### Recapture Analysis

Thus, the appropriate approach to analyzing the recapture doctrine is as follows:

- (1) The first step in applying the recapture rule is to determine whether and in what 'aspect' the reissue claims are broader than the patent claims. Clement, 131 F.3d at 1468.
- (2) The second step is to determine whether the broader aspects of the reissue claims relate to surrendered subject matter. Clement, 131 F.3d at 1469; Mentor Corp. V. Coloplast, Inc., 998 F.2d 992, at 995-96 (Fed. Cir. 1993): To determine this, the Court looks into the prosecution history for arguments and changes to the claims in an effort to overcome prior art. Id.
- (3) Once it is determined that an applicant has surrendered the subject matter of the canceled or amended claim, we then determine whether the subject matter has crept into the reissue claim. Clement, 131 F.3d at 1469.
- (4) The final test regarding the recapture rule is whether the narrowed portions of the reissue claims help it escape the rule. "[A] reissue claim narrower in scope escapes the recapture rule entirely." Clement, 131 F.3d at 1469; Ball Corp. v. United States, 729 F.2d 1429, at 1436. "The purpose of this exception to the recapture rule is to allow the patentee to obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects." Hester, 142 F.3d at 1483. Additionally, the reissue claim must be materially or substantially narrower, and the narrowing aspects must not be "completely unrelated" to the prior art rejection. Clement, 131 F.3d at 1470.

This approach has also been adopted in several cases since Hester. See, e.g., Dethmers Mfg. Co. v. Automatic Equip. Mfg. Co., 23 F. Supp. 2d 974, 1998 U.S. Dist. LEXIS 15586 (N.D. Iowa 1998); Pannu v. Storz Instruments, Inc., 106 F. Supp. 2d 1304, 2000 U.S. Dist. LEXIS 10688, 14 Fla. L. Weekly Fed. D 12 (S.D. Fla. 2000).

For simplicity, in the present reissue application, it can be assumed that steps (1) and (2) do not afford applicant the opportunity to escape the recapture rule. The limitation virtual device driver was both added to the claims and argued in the prosecution history. Thus, it appears fairly evident from the record that the original claim 11 without the limitation “virtual device driver” was surrendered subject matter. With respect to step (3), applicant believes that it could be argued that the surrendered subject matter has not crept back into the claims because the claims differ materially. Applicant notes that this point was argued in the prior response and hereby renews these arguments. Additionally, however, applicant believes that applicant’s argument below with respect to step (4) is convincing, and respectfully requests reconsideration.

Accordingly, our inquiry turns to whether the narrowed portions of the reissue claims can help them escape the recapture rule. To do so, they should be directed to “overlooked aspects” and the claims must be materially or substantially narrower than the surrendered claim.

### III. Analysis

#### A. Applicant Only Surrendered Original Claim 11 with non-Virtual Device Drivers

To determine whether an applicant surrendered particular subject matter, we look to the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection. Clement, 131 F.3d, at 1469. In prosecution of the Original Application, applicant clearly surrendered claim 11 absent the “virtual” adjective describing the recited device driver.

Claim 1 was never amended and reads as follows:

1. A computer system comprising:  
a bus;  
at least one memory coupled to the bus for storing data, including an operating system; and  
a central processing unit (CPU) coupled to the bus running the operating system with a virtual device driver (VxD), wherein the virtual device driver performs device idle detection using one or more events timers indicating the activity level of at least one local device, and further wherein the virtual device driver places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time.

Claim 11 was amended as shown by the underlined portions below:

11. A computer system comprising:  
a bus;  
a central processing unit (CPU) coupled to the bus running an operating system and at least one power-unaware application, wherein the operating system has a virtual device driver performing device idle detection using one or more events timers indicating the activity level of at least one local device, and further wherein the virtual device driver places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.

Claims 21 and 29 were added after the first Office Action in the Original Application. These claims were not amended to overcome any art rejections:

21. A computer system comprising:  
at least one bus;

a memory coupled to said at least one bus;  
a device coupled to said at least one bus;  
a processor coupled to said at least one bus, wherein the processor is configured to execute a virtual device driver to control placement of said device into a reduced power consumption state.

29. A method for controlling an input/output (I/O) device, said method comprising the steps of:  
executing a virtual device driver;  
monitoring activity of the I/O device;  
detecting the I/O device being inactive for a predetermined period of time; and  
the virtual device driver placing the I/O device in a reduced power consumption state in response to the I/O device being detected as inactive.

Thus, all issued claims contain the "virtual" limitation added in claim 11 to modify "device driver". Additionally, applicant argued with respect to claim 11 that the references Smith (US Patent 5,167,024), Stewart (US Patent 5,404,546), Kardach (US Patent 5,276,888), Mattox (US Patent 5,404,321) do not disclose the use of virtual device drivers. Applicant noted that the same argument applied to claims 21-35 but did not amend these claims and never responded to any art rejection of these claims. As applicant noted, these arguments were not applied to overcome any art rejections for claims 1-10 as claims 1-10 were in condition for allowance as originally filed. Thus, the only possible subject matter surrendered is that of claim 11 prior to the characterization of the software as being a "virtual" device driver.

Accordingly, what applicant has surrendered is the following claim (original claim 11):

A computer system comprising:  
a bus;  
a central processing unit (CPU) coupled to the bus running an operating system and at least one power-unaware application, wherein the operating system has a device driver performing device idle detection using one or more events timers indicating the activity level of at least one local device, and further wherein the device driver places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.

In the prosecution of the original application, applicant argued that the various references did not "disclose the use of virtual device drivers to provide power control over devices." Response Dated 5/28/96, p. 6. The Examiner agreed and even had

suggested such in the Office Action mailed 1/26/96, p. 6 (“Independent claim 1 is similar to claim 11, except that it specifies the use of *virtual* device drivers to provide power control over devices, instead of using the normal devices drivers of claim 11. As virtual device drivers have no permanent tie to specific hardware, their use in controlling power to specific hardware is considered a novel departure from normal methods of power control.”) (emphasis in original). Accordingly, it is clear that applicant surrendered claim 11 absent the virtual device driver limitation.

However, applicant did not previously present any of now-presented reissue claims. Nor did applicant deliberately withdraw or amend any of these claims. Applicant is not merely trying to re-claim the use of “normal device drivers” to perform power management. Thus, applicant’s reissue claims differ substantially from the originally presented claim 11. Accordingly, the recapture doctrine analysis must go deeper than the simple flat-out rejection given in this case.

#### B. The Prior Art Rejection(s)

A threshold inquiry is whether added limitations are “completely unrelated” to the prior art rejection. Clement, 131 F.3d at 1470. To decide whether applicant’s claim amendments are “completely unrelated” to the prior art rejection, we must consider the prior art rejection, and what is and is not related to that prior art rejection.

Although it seems quite basic, the issue of “what is a prior art rejection” warrants discussion in this case because there appears to be some confusion of the “prior art rejection” and the Examiner’s statements of reasons for allowance of the claims. A prior art rejection is the citation of pertinent references that bear on the novelty or obviousness of a claim, and any accompanying argument or explanation of those references. If the pertinence of the references is readily apparent, the prior art rejection may be the citation of the references and fairly conclusory remarks defining the rejection.



In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.

37 CFR § 1.104(c)(2); MPEP § 706.

Thus, the prior art rejection is a statement of how the prior art allegedly already shows what an applicant is claiming. A prior art rejection is not a statement of the reasons why certain claims are allowable over the prior art.

As noted above, original claim 11 in this case was rejected in view of Smith (US Patent 5,167,024), Stewart (US Patent 5,404,546), Kardach (US Patent 5,276,888), and Mattox (US Patent 5,404,321). In the Original Application, the Examiner rejected Claims 11 and 12 under 35 U.S.C. §103 as being unpatentable over Smith in view of Stewart. The Examiner rejected Claims 13 and 14 under 35 U.S.C. §103 as being unpatentable over Smith and Stewart and further in view of Kardach. The Examiner rejected Claims 13 and 14 under 35 U.S.C. §103 as being unpatentable over Smith and Stewart and further in view of Kardach and Mattox.

Smith discloses a power management system for a portable computer system that uses a software routine run with a dedicated power management hardware (PMGR 11) to continually monitor various units in the computer system and to remove power or clock signals from these units when these units are not needed and/or are not currently in use. Thus, Smith shows the use of a hardware and software combination that performs device idle detection. Smith does not show or discuss, however, power management of a configurable system (i.e., a system that has a configurable device which does not have permanent mappings or permanent ties or a system in which the power management hardware/software does not have permanent ties to the devices).

Stewart also discloses power management for a portable computer that uses a dedicated power management microcontroller to monitor the activity of various I/O devices. If a particular device has been inactive for a preselected period of time, the

power control system performs operations necessary to cause at least one device to enter a reduced power consumption state. As with Smith, Stewart does not disclose using a power control for a system with configurable or re-configurable devices. Similarly, Kardach and Mattox do not teach or disclose power management software for configurable or re-configurable devices.

Thus, the cited prior art indicates that power management hardware/software combinations were available. Such combinations apparently dealt with static systems lacking configurable devices. Applicant's original claim 11 was rejected because it was arguably indistinguishable from prior art systems that had power management hardware/software directly tied to devices and hence performed power management for statically or permanently configured devices. Thus, the prior art rejection was that original claim 11 was obvious in view of the prior art.

Additionally, however, the Examiner noted that claim 1 was allowable and that the use of virtual device drivers, which can lack a permanent tie to a specific hardware device, constituted a novel departure from the prior art of record. This is a statement of why claim 1 is allowable. This is not a prior art rejection. This statement does not set forth what is in the prior art and how that bears on applicant's claims. This statement merely indicates that the Examiner conceded that this claim limitation distinguishes over the prior art of record. The Examiner's statement hints at the underlying prior art rejection. The Examiner was implicitly stating that the prior art was power management via software that had a permanent tie to a specific hardware device.

The Examiner is now arguing that because applicant is not including the reason the original claims were allowed (the "virtual device driver" limitation), that applicant is not entitled to any claims via reissue. If this was a correct statement of the law, then the mere recitation of reasons for allowance would preclude a broadening reissue. This is incorrect.

Returning to the above simplified example, consider further that the record stated

“The combination of A, B, and C is considered to be a novel departure from the prior art of record.” Under the Examiner’s position in this case, the statement regarding the combination (A, B, C) would preclude any claims that lack all three elements. This approach would completely eviscerate the reissue statute, which explicitly provides for broadening reissues.

The proper inquiry under Clement is whether the narrowing limitations added by applicant in this reissue are “completely unrelated to the rejection”. The prior art rejection must be an affirmative statement of what the prior art contains. The rejection in this case was a 35 USC § 103 rejection in view of the references Smith, Stewart, Kardach, and Mattox. These references were construed as teaching power management software that was capable of power managing devices and performing device idle detection for individual devices that are specifically mapped in a certain way (i.e., that the power management software has a permanent tie to a specific device). Allegedly, original claim 11 covered such devices. That was the prior art rejection. Original claim 11 was deemed obvious.

Applicant’s newly added claims do relate to this rejection. Applicant’s newly added claims pertain to the prior art rejection in that they relate to configurable devices that do not have all of the permanent mappings present in the prior art. This configurability aspect may also be referred to as configurability, reconfiguration, registration with a configuration manager, plug-n-play abilities, etc. These limitations are pertinent to the prior art rejection because the prior art rejection was based on the power management of permanently mapped devices, as explicitly noted in the reasons for allowance (“As virtual device drivers have no permanent tie to specific hardware, their use in controlling power to specific hardware is considered a novel departure from normal methods of power control.”). Configurability indicates a lack of some of the permanent ties to all of the devices in the system shown in the prior art.

Thus, applicant submits that applicant’s new reissue claims due contain narrowing

limitations that are related to the prior art rejection. The “configurability” (and related) limitations are directly pertinent to the prior art rejection because configurability of a device means that all ties to that device can not be permanent, and that the device cannot be permanently mapped in a particular way.

Pertinence being established, we turn to the materiality of the narrowing of the claims.

C. The Reissue Claims Relate To An Overlooked Aspect And Materially Or Substantially Narrow The Claims Versus The Original Patent Claims

It is clear that applicant’s newly provided claims were never present in the Original Application and hence were never canceled (surrendered) (*see* § III.A, *supra*). Furthermore, applicant has explained why applicant’s claims are not narrowed in an aspect completely unrelated to the prior art rejection, but rather are narrowed in a manner pertinent to the prior art rejection (*see* § III.B, *supra*). Accordingly, a further inquiry to determine whether recapture bars these claims is necessary. The courts have indicated that the required inquiry is whether the reissue claims claim an overlooked aspect and are materially or substantially narrower.

The final test regarding the recapture rule is whether the narrowed portions of the reissue claims help it escape the rule. “[A] reissue claim narrower in scope escapes the recapture rule entirely.” *Id.* 131 F.3d at 1469; *Id.* 729 F.2d at 1436. “The purpose of this exception to the recapture rule is to allow the patentee to obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects.” *Hester Industries, Inc.*, 142 F.3d at 1483. Additionally, the reissue claim must be materially or substantially narrower. *Id.*

Pannu, 106 F.Supp 2d, at 1309.

The Court in Pannu concluded that the reissue claims in that case did not relate to any overlooked aspect of the invention. It found that the allegedly overlooked aspects claimed in the reissue claims had been claimed in the original independent claims of the

patent that were surrendered. The allegedly overlooked limitations remained in the application throughout prosecution (in dependent claims after the broadest original claims were canceled). It also found that an added limitation, a change from “substantially greater” to “at least three times greater” did not materially or substantially narrow the claim.

Thus, in Pannu, the Court delineated several contours of the recapture analysis. First, the Court found that claims limitations once contained in the broadest (but surrendered) claims that throughout prosecution remained in the claims of the patent were not to be considered overlooked. Secondly, the Court found that claims with language slightly narrower in degree (three times v. “substantially”) were not materially narrower. Applicant will show that applicant’s newly claimed aspects were overlooked in the original application (applicant’s newly claimed aspects were not in the broadest original claims, or canceled, or argued in prosecution) and that the claim limitations are much more substantial than the simple change of degree shown in Pannu (see detailed chart below).

In Mentor Corp. V. Coloplast, Inc., 998 F.2d 992 (Fed. Cir. 1993), the court also engaged in a similar analysis, finding that claims in the reissue did not add material limitations:

The limitation in claim 6 that the catheter material be “flexible” did not materially narrow the claims, which already recited that the material be “resilient.” Likewise, the limitation that the catheter be rolled outward to form a “single” roll did not materially limit the claims; the catheter can only be rolled and applied from a single end to form a single roll when the other end is connected to a urine collection means. Further, the addition of the words “thereon,” referring to the location of the adhesive release layer on the outer surface prior to unrolling, and “only,” referring to the adhering of the adhesive to the inner surface after unrolling, did not materially narrow the claims.

Thus, the Mentor court found “flexible” to not be a material limitation of a catheter that is

already claimed to be “resilient” since a resilient catheter is also inherently somewhat flexible. Additionally, the Court did not find the “single” limitation to be materially limiting as it was inherently required by the remainder of the claim. Additionally, the use of “thereon” and “only” were simply deemed to not materially limit the claims. Thus, the Mentor decision indicates that already-inherently-required limitations are not materially limiting. As detailed in the chart below, applicant has added truly limiting additional limitations to applicant’s reissue claims when these claims are compared to the surrendered subject matter.

In Hester, the court found that “spiral conveyance path” and “high humidity steam” limitations were not aspects of the invention that were overlooked during prosecution of the original patent. To the contrary, these aspects were included in the original claim 1 and were pointed out in prosecution in an attempt to overcome the Examiner’s obviousness rejections. Accordingly, the Hester decision indicates that aspects contained in the original broadest claim (which was surrendered) and argued in prosecution can not be considered “overlooked”. Again, applicant explains in the table below how applicant’s reissue claims do relate to overlooked aspects.

The court in Hester also found that the “high humidity steam” limitation was broader than the original claims and therefore was not materially limiting. Additionally, the applicant had failed to produce any evidence that the “spiral conveyance path” was a material limitation (the Examiner had cited prior art cookers having a spiral conveyance path). Thus, the Hester decision also indicates that an applicant must be able to point to truly narrowing limitations. Applicant does so in the table below.

Finally, the Court in Sonoco Prods. Co. v. Durabag Co., 1994 U.S. Dist. LEXIS

18443 (DC CD Cal 1994) also ruled that claim differences were not sufficiently material to clear the recapture hurdle. A “tab means” that was added to the claim was deemed not sufficiently material because the “tab means” limitation was contained in several of the canceled claims of the original patent and because the Examiner deemed claims containing the tab means to be obvious. In other words, the tab means were deemed by the Examiner in the original case to be obvious in view of the prior art, and their addition was therefore immaterial. Applicant submits that the limitations applicant has added in applicant’s reissue claims are not obvious in view of the prior art. In fact, the Examiner in this case has *never* questioned the patentability of any of the now-pending reissue claims on prior art grounds.

On the other hand, in B.E. Meyers & Co. v. United States, 47 Fed. Cl. 200 (Fed. Cl. 2000), the Court found that a reissue application did not violate the recapture rule. The original application recited a pulsing circuit, which was narrowed to avoid the prior art. The reissue claims related to a lens apparatus that produced a beam with a well-defined peripheral edge. The Court found that the lens apparatus was in fact a separate invention eligible for patent protection, independent of whatever type of pulsing circuitry might be used in combination with the lens system in any particular device. In order to receive protection for this aspect of its invention, the applicant had to delete any reference to pulsing circuitry in the reissue claims. Of course, in doing so, the applicant deleted the specific pulsing diode and substantial pulsing current limitations that had been added to its original claim to distinguish the prior art. Thus, Meyers demonstrates that a different invention, absent the limitations added to obtain allowance of the patent, may be obtained via reissue. Applicant submits, and will describe in further detail below, that applicant’s

new claims are either a different invention than previously claimed or materially narrower than original claim 11, and therefore avoid the recapture rule.

#### Legal Principles to Apply

From the applicable cases, the following principles relevant to the fourth step of recapture analysis for this application may be gleaned. A claim may be obtained via a broadening reissue despite the surrender of certain subject matter. However:

(1) A material narrowing of the claims in some regard is required when a limitation added to gain allowance is removed. The cases give examples of types of limitations that are not material:

- (a) a claim addition which would be obvious is not material (Sonoco);
- (b) a claim addition which is arguably included in the characteristics of the claim is not material (resilient implies flexible, Mentor);
- (c) a claim addition that recites something inherent in the remainder of the claim is not material (“single” implicit given other structure in claim, Mentor);
- (d) a claim limitation that is close or arguably the same in quantity is not material (Pannu).

(2) Additionally, the cases indicate that if a feature was not “overlooked”, the recapture doctrine may bar it from being claimed in reissue. A feature is not “overlooked” if

- (a) it was included in an original claim of the original patent that was then canceled (hereafter “original-surrendered claims”) (Hester, Pannu); or



(b) presented in claims of the original patent and argued as a basis for patentability in prosecution of the original patent (Hester).

(3) However, if a materially different invention is claimed, the recapture doctrine will not bar it.

Applicant is now claiming, in applicant's reissue application, numerous overlooked aspects of the invention. The appropriate inquiries detailed above must be performed on a claim-by-claim basis. Table I, details the various aspects which are now claimed in the reissue claims, including evidence that these aspects were overlooked and why the claim is materially narrow than the patent claims (reference made to claims 11 (apparatus) and 29 (method)).

Applicant submits that the newly added limitations are very different from those ruled to be immaterial in the cases discussed above. None of these "aspects" argued below were previously included in any of the original-surrendered claims and argued as a basis for patentability, nor deemed obvious at any point in the prosecution. The newly recited aspects do not just re-characterize the prior limitations in a manner implied by the prior recitation (i.e., flexible v. resilient). And, the new aspects also go much further than to recite implicitly required structure and do more than recite an arguably already-included numerical range.

The materiality of the narrowing of the claims is further discussed in great detail in Table I below. Briefly, however, applicant will address one general limitation, configurability, and the ability to power-manage configurable devices since this aspect applies to numerous claims. Configurability in general is both narrower in one respect and broader in one respect than the original "virtual device driver" limitation. As to the

narrowing, a “virtual device driver” does not inherently provide the ability to power manage configurable devices. A virtual device driver could perform the power management claimed in claim 11 for non-configurable devices without the data structures, configuration manager, or like routines used to achieve power management for configurable devices. In other words, claim 11 does not explicitly or inherently recite any configuration management facilities. While the virtual device driver lacks permanent ties to devices, is not necessarily set up to handle varying configurations. Each device could have a mapping or various features set by BIOS, firmware, or in a specific memory or register location that the virtual device driver would not be programmed to check for changes unless that virtual device driver was additionally capable of performing power management for configurable devices.

Thus, the limitation that software be able to power-manage configurable devices is materially narrowing in that it requires configuration management capabilities not inherently present by the mere recitation of the term virtual device driver.

On the other hand, configurability may be broader in that the software that performs these functions need not be a “virtual device driver”, but could be other software capable of performing such functions.

Applicant submits that each aspect discussed below independently materially narrows the claims over the claims from the Original Application and therefore removes the reissue claims from prohibition of the recapture doctrine. In addition, applicant notes that many claims recite numerous materially limiting aspects (up to 7), which in combination most certainly allow these claims to escape the recapture prohibition.

New Reissue Claim	Original Claim	New Aspects	Why "Overlooked"	Materially Narrowed
<p>51. (Amended) An article comprising:  a machine readable storage medium storing instructions comprising a device manager and power management software, said power management software, if executed by a system, performs operations comprising said power management software;  cooperates with said device manager to allow power management of a plurality of devices in the system which are configurable devices; and  manages a power level for each of the plurality of devices in the system and is capable of placing one or more of said plurality of devices in a reduced power consumption state.</p>	<p>11. A computer system comprising:  a bus;  a central processing unit (CPU) coupled to the bus running an operating system and at least one power-unaware application, wherein the operating system has a <u>virtual</u> device driver performing device idle detection using one or more events timers indicating the activity level of at least one local device, and further wherein the virtual device driver places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.</p>	<p>(1) device manager &amp; power management software perform power management functions.  (2) Power management software <u>cooperates</u> with device manager to allow power management of <u>configurable</u> devices.</p>	<p>(1) The terms "power management software" and "device manager" were not claimed as the active portion in any of the original claims.  (2) None of the original independent claims, nor any surrendered claims, focus on the ability of the power management software to operate with configurable devices. Nor was configurability ever argued or addressed in the prosecution history. Configurability was erroneously never seized on as a major feature for patentability as applicant's attorney unfortunately only focused on the "virtual" nature of the device driver. The importance of this advance is underscored by comments made by the Examiner. The Examiner pointed out in the Office Action mailed 1/26/96 and the Office Action</p>	<p>(1) In the original patent, the VxD as a whole was recited as performing power management functions. Here, a more detailed and granular structure is given in that a "device manager" and other "power management software" are required.  (2) The ability to perform power management in an environment with configurable devices in the manner claimed was a material advance over the prior art. Prior art software-based power management was typically performed by dedicated device drivers that dealt with specific hardware configured in a manner known to that device driver. Applicant provided the ability for a centralized power management software facility that could adapt to configurable devices which may be either configured differently at boot-up time or potentially re-configured during operation. Stating that power management supports configurable devices is materially narrower than just reciting a virtual device driver because a virtual device driver need not be</p>

				<p>dated 7/30/96 that the lack of a permanent tie to specific hardware constituted a novel departure from the prior art. However, neither applicant nor the Examiner realized the importance of configurability to power management at the time. Applicant never presented independent claims relating to the lack of permanent ties to specific hardware devices or the configurable nature of applicant's power management software.</p>	<p>able to interface with configurable devices to perform as indicated in the claim limitations of original claim 11. In other words, claim 11 is non-specific as to whether the devices are configurable, and thus they may be non-configurable (e.g., a device may require a particular memory range or I/O space). Reissue claim 51 requires that the power management software be able to accommodate devices that are configurable and which may not have permanent specific mappings. This is clearly an added burden on the power management software and is a material limitation vis-à-vis claim 11.</p>
52. The article of claim 51 wherein said power management software operates at a kernel level of an operating system	See claim 11, above.	(1) software operates at kernel level.	(1) The privilege level of the power management software was completely overlooked as it was not claimed in any claims or argued.	(1) Software is capable of operating at a variety of levels. The fact that the power management software is operating at the kernel level eliminates the possibility that higher privilege level code such as some user code be used to perform these functions. For example, in some Windows versions, this kernel limitation would limit the power management software to being ring 0 software.	
53. The article of claim 52 wherein said device manager	See claim 11, above.	(1) device manager	(1) The device manager being a plug-and-play	(1) There are and/or were a significant set of peripherals and	

comprises a plug and play manager.		comprises a plug-and-play manager.	manager was completely overlooked as it was not claimed in any claims or argued.	computer devices which are not plug-and-play devices. Such non-plug-and-play devices require specific configurations in order to properly operate. This claim limits the device manager to including a plug and play device manager capable of handling plug-and-play configurable devices. This is an added burden and a material limitations on the power management software. See also discussion above with respect to aspect (2) in claim 51.
54. The article of claim 0 wherein said power management software comprises a power manager that forms a part of a kernel of the operating system.	See claim 11, above	(1) software forms a part of the kernel.	See claim 52, aspect (1).	See claim 52, aspect (1).
55. The article of claim 53 wherein said power management software, if executed, communicates with said plug and play manager to update data structures if configuration changes occur to allow power management of dynamically reconfigurable devices.	See claim 11, above	(1) s/w communicates to update data structure (2) dynamically reconfigurable devices	(1) The original-surrendered claims make no mention of interaction of a plug-and-play manager with additional power management software. In particular, updating data structures upon configuration changes was never recited in original-surrendered claims, nor argued as a basis for patentability.  (2) The original-	(1) This claim is substantially narrower than original claim 11 because claim 11 does not at all discuss reconfiguration, reconfigurable devices, or data structures used to maintain such configurability. See also discussion above with respect to aspect (2) in claim 51. (2) The power management software is further burdened by having to deal with dynamic re-configuration, even beyond the configuration discussed with respect to claim 51, aspect (2).

			surrendered claims and the prosecution history make no mention of dynamically reconfigurable devices.	
56. The article of claim 51 wherein said power management software, if executed, registers with said device manager to be notified of configuration changes	See claim 11, above	(1) registration with device manager	(1) Registration of particular power management software units with the device manager was not claimed in the original claims nor argued in the prosecution.	(1) This claim is substantially narrower than original claim 11 because original claim 11 does not discuss registration nor configuration changes of devices. See also discussion above with respect to aspect (2) in claim 51.
57. (Once Amended) An article comprising: a machine readable storage medium storing instructions comprising power management software, said instructions, if executed by a system cause said system to perform operations comprising: allowing power management of a plurality of devices in the system which are configurable devices; and managing a power level for each of the plurality of devices in the system, said power management software being capable of placing one or more of said plurality of devices in a reduced power consumption state, wherein said power management software, if executed, provides support for idle detection for at least one of said plurality of devices.	11. A computer system comprising: a bus; a central processing unit (CPU) coupled to the bus running an operating system and at least one power-unaware application, wherein the operating system has a <u>virtual device driver</u> performing device idle detection using one or more events timers indicating the activity level of at least one local device, and further wherein the <u>virtual device driver</u> places idle local devices in a reduced power consumption state when associated events timers	(1) Power management software manages power level of <u>configurable</u> devices.	See claim 51, aspect (2).	See claim 51, aspect (2).

	indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.			
58. The article of claim 51 wherein said power management software comprises a power manager, if said power manager, if executed, providing system level power management including the use of multiple system level power management states for said plurality of devices.	See claim 11, above	(1) system-level power management states	(1) The original claims only refer to device level power management states and do not claim overall system level power management states.	(1) There is a material difference between power managing a system on a device-by-device basis v. a system level basis because the system-level scheme may impact devices with different activity levels and different power or interface requirements. Moreover, a system-level scheme may delay or accelerate powering down certain devices based on other devices' activities.
59. Dependent claim patentable by way of its parent claim.				
60. The article of claim 55 wherein said power management software, if executed, places the system in a sleep state when the system is idle and keeps said system in said sleep state until activity is detected, and wherein the sleep state is one of a plurality of system power management states, and further wherein said system stops a clock for a	See claim 11, above.	(1) system-level sleep state. (2) stops clock for processor in system sleep state	(1) The original claims only refer to device level power management states and do not claim overall system level power management states, much less specify a sleep state. (2) The original claims do not recite stopping of the clock for the processor, nor was this aspect argued in prosecution.	(1) There is a material difference between power managing a system on a device-by-device basis v. a system level basis, including a system level sleep state, because the system level scheme may impact devices with different activity levels and different power or interface requirements. Moreover, a system-level scheme may delay or accelerate powering down certain devices based on other devices'

system processor in said sleep state				activities. For example, in a system sleep state, certain devices may be put to sleep only after other devices have also been idle for a sufficient duration. (2) Power managing of the processor can be quite different and more complex than power managing other system devices since a processor typically directs overall system activity. This recitation materially narrows this claim over original claim 11 because claim 11 only recited device power management and not device and processor power management.
61. The article of claim 53 wherein said operating system, if executed, provides virtual memory organization and multitasking operation.	See claim 11, above.	(1) OS provides virtual memory organization and multitasking.	(1) A virtual memory and multitasking environment was not previously claimed or argued in prosecution.	(1) This type of environment is materially more limited than the environment of original claim 11, which could have included flat or physical-only memory arrangements and/or single-task environments.
62. The article of claim 53 wherein said plurality of devices comprise: an I/O device that is placed in a first reduced power consumption state by the power management software if the I/O device is inactive for a first period of time; and a processor that is placed in a second reduced power consumption state by the	See claim 11 above.	(1) power management of both an I/O device and the central processor coordinated by the same power management software.	(1) None of the claims in the patent nor any arguments in prosecution discuss the ability to provide power management input for both the processor and devices.	(1) The ability to influence the power management states of both a processor and an I/O device are a significant advance over power management techniques that only coordinate I/O devices or a single I/O device. The processor, being a component which may direct system interaction may require more careful power-state control than I/O devices which typically do not direct overall system



power management software if the system is idle for a second period of time.				function. Anyone skilled in the art will easily recognize the major differences in power managing a processor v. an I/O device. This claim is materially narrower than original claim 11 because both processor and other device management is required.
63. The article of claim 51 wherein said power management software performs power management for said plurality of devices and lacks a permanent tie to a specific hardware device in the system.	See claim 11, above.	(1) power management software lacks a permanent tie to a specific hardware device in system	(1) This aspect was never claimed as such in any claims of the '342 patent.	(1) This claim is materially narrower than claim 11 based on limitations discussed with respect to the parent claim, claim 51. The Examiner pointed to this reason as justifying patentability as discussed with respect to claim 51. This claim, by itself, absent limitations in claim 51, may be broader than original claim 11, but relies on claim 51 to avoid recapture.
64. An article comprising: a machine readable storage medium storing power management software which, if executed by a system, performs operations comprising said power management software: coordinates power management for a plurality of devices; and registers with a configuration manager to be notified of configuration changes for any of said plurality of devices.	11. A computer system comprising: a bus; a central processing unit (CPU) coupled to the bus running an operating system and at least one power-unaware application, wherein the operating system has a <u>virtual</u> device driver performing device idle detection using one or more events timers indicating the activity	(1) registration with a configuration manager to be notified of configuration changes.	(1) See arguments with respect to aspect (2) in claim 51 above (regarding configurability) and aspect (1) in claim 56 above (registration).	(1) See aspect (1) discussed with respect to claim 51 above.  (2) See arguments with respect to aspect (2) in claim 51 above (regarding configuration and configurability) and aspect (1) in claim 56 above (registration).

	level of at least one local device, and further wherein the <u>virtual device driver</u> places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.				
65. Dependent claim patentable by way of its parent claim.					
66. The article of claim 65 wherein said device driver, if executed, in response to a configuration change, examines its data structures to adapt to remapped system resources.	See claim 11, above.	(1) Adaptation to remapped resources (configuration change) via data structures	(1) Examination of data structures to adapt to remapped system resources was not claimed in any original-surrendered claims nor argued in the prosecution.	(1) This claim is substantially narrower than original claim 11 because original claim 11 does not discuss configuration changes or remapping of devices. See also discussion above with respect to aspect (2) in claim 51.	
67. The article of claim 65 wherein said configuration manager is a plug and play manager.	See claim 11, above.	(1) configuration manager comprises a plug-and-play manager.	(1) See aspect (1) described with respect to claim 53 above.	(1) See aspect (1) described with respect to claim 53 above.	
68. The article of claim 64 wherein said power management software, if	See claim 11, above.	(1) alteration of data structures in response to a	(1) The original-surrendered claims make no mention of responding	(1) The ability to respond to support reconfiguration is materially more limited than the	

executed, alters data in a data structure in response to a configuration change to allow continued power management of devices after said configuration change.		configuration change to allow continued power management	to configuration changes and this aspect was never argued in prosecution.	power management technique originally claimed in claim 11 because that technique would apply to devices that are either re-configurable or non-reconfigurable. See also discussion with respect to aspect (2) in claim 51.
69. (Amended) The article of claim 68 wherein said power management software, if executed, instructs the configuration manager to notify it when there has been the configuration change and wherein said power management software responds to a notification of the configuration change by updating data in said data structure in the same manner as when examining the data structure at system boot-up time.	See claim 11, above.	(1) power management software instructs the configuration manager to notify it when there has been a configuration change. (2) power management software responds to the notification by updating data in the same manner as at system boot.	(1) Neither the original-surrendered claims nor prosecution arguments discuss the interaction between the configuration manager and the other power management software. (2) Neither the '342 claims nor argument in the prosecution history specify that data is updated in the same manner as is done at boot-up time.	(1) The entire idea of a configuration manager to manage configurable devices is absent from original claim 11. This is a material difference as discussed with respect to aspect (2) of claim 51 above. (2) The use of the same technique to update the data structures as is done at boot time is a material narrowing because it would be possible to attempt to only update a subset of the entries in data structures after boot time. This aspect is materially limiting because the technique used to update the data structure must be substantially the same as at boot-up time.
70. An article comprising: a computer readable storage medium storing power management software comprising a power manager and additional software which is operating system software, the power	11. A computer system comprising: a bus; a central processing unit (CPU) coupled to the bus running an operating system and at least one power-	(1) power manager & additional software perform power management functions. (2) operation at	(1) The broader term "power management software" and "additional software" were not claimed as the active portion in any of the original claims. (2) See claim 52, aspect	(1) In the original patent, the VxD as a whole was recited as performing power management functions. Here, a more detailed and granular structure is given in that a "power manager" and other "additional software" are required.

management software, if executed by a computer, performs operations comprising said power management software: forms a part of a kernel level of an operating system for the computer; cooperates with a device manager to allow power management of a plurality of system devices after reconfiguration of said plurality of system devices; and manages a power level of the computer.	unaware application, wherein the operating system has a <u>virtual</u> device driver performing device idle detection using one or more events timers indicating the activity level of at least one local device, and further wherein the <u>virtual</u> device driver places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.	kernel level of OS. (3) cooperation to allow reconfiguration (4) manages system power levels	(1). (3) See claim 51, aspect (2); claim 55, aspect (2). (4) See claim 58, aspect (1).	(2) See claim 52, aspect (1). (3) See claim 51, aspect (2); claim 55, aspect (2). (4) See claim 58, aspect (1).
71. Dependent claim patentable by way of its parent claim.				
72. The article of claim 71 wherein said power management software provides support for clock throttling of a system processor.	See claim 11, above.	(1) power management of processor	(1) See aspect (1) of claim 62 above.	(1) See aspect (1) of claim 62 above.
73. (Amended) An article comprising: a computer readable medium	11. A computer system comprising: a bus;	(1) power management and additional	(1) See aspect (1) of claim 70. (2) See aspect (1) of claim 52. (3) The use of a graphical user	(1) See aspect (1) of claim 70. (2) See aspect (1) of claim 52. (3) The use of a graphical user

<p>storing a plurality of computer executable instructions including power management software and additional software to implement an operating system, the power management software, if executed by a computer system, operates in an operating system cooperative manner with said operating system at a kernel level which is a highest privilege level of the operating system, and causes the computer system to perform operations comprising: providing support for device idle detection for an input/output device in said computer system to determine when said input/output device has been inactive for a first duration, the first duration being a user configurable duration that may be varied based on desired power savings using a graphical user interface; placing said input/output device in a reduced power consumption state if said input/output device has been inactive for the first duration;</p>	<p>a central processing unit (CPU) coupled to the bus running an operating system and at least one power-unaware application, wherein the operating system has a <u>virtual</u> device driver performing device idle detection using one or more events timers indicating the activity level of at least one local device, and further wherein the <u>virtual</u> device driver places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.</p>	<p>software. (2) kernel level. (3) user configurable device idle detection varied using GUI. (4) cooperating with PNP manager to power manage PNP device. (5) system-level power management. (6) monitoring global events. (7) system-level sleep state.</p>	<p>claim 52. (3) The original-surrendered claims and the prosecution history make no mention of the use of a graphical user interface, nor of allowing a user to configure idle times. (4) See claim 53, aspect (1) and claim 51, aspect (2). (5) See aspect (1) of claim 58. (6) The original-surrendered claims and the prosecution history make no mention of monitoring global events. (7) See aspect (1) of claim 60.</p>	<p>interface to vary idle times is a material limitation because it requires the idle times to be variable via a GUI. This precludes this claim from covering a technique in which the idle times are only variable by other means, such as hardwiring, text editing, non-GUI-based BIOS reprogramming, etc. These are significant and material approaches that are eliminated from the scope of this claim. (4) See claim 53, aspect (1) and claim 51, aspect (2). (5) See aspect (1) of claim 58. (6) The requirement that global events be monitored is material because the system of claim 11 could otherwise potentially just monitor events specific to specific devices. Requiring that events beyond those that only indicate the activity of specific devices is clearly a material deviation because it is entirely possible to just monitor specific devices. (7) See aspect (1) of claim 60.</p>
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cooperating with a plug and play manager that, in cooperation with said power management software, allows power management of said input/output device even though said input/output device is a plug and play configurable device; providing support for system level power management by monitoring global events; placing said computer system into one of a plurality of system level power management states as a part of system level power management implemented by said power management software, one of said plurality of system level power management states being a sleep state into which the computer system is placed due to the system remaining idle.					
74. A method comprising: monitoring, using power management software, a power level of a plurality of devices in a system; detecting an inactive device; placing one of said plurality of devices in a reduced power	29. A method for controlling an input/output (I/O) device, said method comprising the steps of: executing a virtual device driver;	(1) system level power management. (2) allowing configurable devices and reconfiguration.	(1) See aspect (1) of claim 58. (2) See claim 51, aspect (2); claim 68, aspect (1).	(1) See aspect (1) of claim 58. (2) See claim 51, aspect (2); claim 68, aspect (1).	

consumption state due to detected inactivity; performing system level power management using said power management software; and allowing continued power management of devices after device reconfiguration.	monitoring activity of the I/O device; detecting the I/O device being inactive for a predetermined period of time; and the virtual device driver placing the I/O device in a reduced power consumption state in response to the I/O device being detected as inactive.			
75. The method of claim 74 wherein allowing comprises communicating with a device manager to update data structures if configuration changes occur.	See claim 29, above.	(1) s/w communicates to update data structure	See aspect (1) of claim 55.	See aspect (1) of claim 55.
76. The method of claim 75 wherein the device manager comprises a plug and play manager.	See claim 29, above.	(1) device manager comprises a plug-and-play manager.	See aspect (1) of claim 53.	See aspect (1) of claim 53.
77. The method of claim 74 further comprising: programming a first duration of inactivity required to place one of said plurality of devices in said reduced power consumption state based on desired power savings.	See claim 29, above.	(1) programmable nature of idle timers	(1) Neither the '342 patent claims nor the prosecution history makes mention of the programmability of the idle timers.	(1) Providing a programmable idle timer is materially different and more limited in scope than not specifying the programmability of the timer because timers with fixed durations that are not changeable by the user would not be covered absent the programmability limitation.

78. The method of claim 74 wherein performing system level power management comprises: placing said system in a sleep mode that stops a clock to a system processor until system activity is detected.	See claim 29, above.	(1) system level sleep mode	(1) See claim 60, aspect (1).	(1) See claim 60, aspect (1).
79. The method of claim 74 wherein said power management software operates at a kernel level of an operating system for the system and wherein said power management software cooperates with operating system routines in performing system power management.	See claim 29, above.	(1) kernel level.	(1) See aspect (1) of claim 52.	(1) See aspect (1) of claim 52.
80. A method comprising: coordinating power management for a plurality of devices; registering with a configuration manager to be notified of configuration changes for any of said plurality of devices.	29. A method for controlling an input/output (I/O) device, said method comprising the steps of: executing a virtual device driver; monitoring activity of the I/O device; detecting the I/O device being inactive for a predetermined period of time; and the virtual device	(1) registering with configuration manager to be notified of configuration changes	(1) See claim 56, aspect (1) and claim 51, aspect (2).	(1) See claim 56, aspect (1) and claim 51, aspect (2).



	driver placing the I/O device in a reduced power consumption state in response to the I/O device being detected as inactive.				
81. Dependent claim patentable by way of its parent claim.					
82. The method of claim 80 wherein said configuration manager is a plug and play manager.	See claim 29, above.	(1) configuration manager is a plug and play manager.	See claim 53, aspect (1).	See claim 53, aspect (1).	
83. The method of claim 80 further comprising: altering data in a data structure in response to a configuration change to allow continued power management of said plurality of devices after a configuration change.	See claim 29, above.	(1) altering data in a data structure	(1) See aspect (1) and (2) of claim 55.	(1) See aspect (1) and (2) of claim 55.	
84. The method of claim 81 further comprising: instructing the configuration manager to notify the device driver when there has been a configuration change; and responding to notification by updating data in a data structure in the same manner as when examining the data structure at system boot-up	See claim 29, above.	(1) instructing the configuration manager to notify when there has been a configuration change. (2) responding to the notification by	(1) See claim 69, aspect (1). (2) See claim 69, aspect (2).	(1) See claim 69, aspect (1). (2) See claim 69, aspect (2).	

time.		updating data in the same manner as at system boot.		
85. (Amended) The method of claim 81 wherein said power management software operates at a kernel level of an operating system and wherein said power management software cooperates with operating system routines in performing power management.	See claim 29, above.	(1) kernel level.	(1) See claim 52, aspect (1).	(1) See claim 52, aspect (1).
86. (Amended) A system comprising: a bus; a plurality of devices coupled to said bus, the plurality of devices being configurable devices, the system being capable of reconfiguring said plurality of devices; a memory containing a device manager and power management software which, if executed by the system, cooperates with said device manager to allow power management of said plurality of devices in the system and manages a power level of said plurality of devices.	11. A computer system comprising: a bus; a central processing unit (CPU) coupled to the bus running an operating system and at least one power-unaware application, wherein the operating system has a <u>virtual</u> device driver performing device idle detection using one or more events timers indicating the activity level of at least one local device, and further wherein the <u>virtual</u> device driver	(1) configurable and reconfigurable devices.	(1) See aspect (2), claim 51.	(1) See aspect (2), claim 51.

	places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.			
87. The system of claim 86 wherein the plurality of devices are plug and play configurable devices.	See claim 11, above.	(1) devices are plug and play devices	(1) See claim 53, aspect (1).	(1) See claim 53, aspect (1).
88. The system of claim 86 wherein said plurality of devices comprises: an I/O device; and a processor.	See claim 29, above.	(1) power management of both an I/O device and a processor	(1) See claim 62, aspect (1).	(1) See claim 62, aspect (1).
89. Dependent claim patentable by way of its parent claim.				
90. Dependent claim patentable by way of its parent claim.				
91. The system of claim 90 wherein said power management software, if executed, places said processor in a reduced processor power consumption state if said	See claim 11, above.	(1) power management of the processor.	See claim 62, aspect (1).	See claim 62, aspect (1).

system is inactive for a second duration.					
92. The system of claim 90 wherein the power manager operates at a kernel level of an operating system for the system, and wherein said device manager comprises a plug and play manager.	See claim 11, above.	(1) kernel level. (2) plug-and-play manager.	(1) See claim 52, aspect (1). (2) See claim 53, aspect (1).		
93. The system of claim 92 wherein said power management software, if executed, communicates with said plug and play manager to update data structures if configuration changes occur to allow power management of dynamically reconfigurable devices.	See claim 11, above.	(1) s/w communicates to update data structure (2) dynamically reconfigurable devices	(1) See claim 55, aspect (1).  (2) See claim 55, aspect (2).		
94. A system comprising: a device; a processor; a memory containing power management software which, if executed by said system coordinates power management for a plurality of devices; and registers with a configuration manager to be notified of configuration changes for any of said plurality of devices.	11. A computer system comprising: a bus; a central processing unit (CPU) coupled to the bus running an operating system and at least one power-unaware application, wherein the operating system has a <u>virtual</u> device driver performing device idle detection using one or more events timers	(1) registers with configuration manager to be notified of configuration changes for devices	(1) See claim 56, aspect (1) and claim 51, aspect (2).		

	<p>indicating the activity level of at least one local device, and further wherein the virtual device driver places idle local devices in a reduced power consumption state when associated events timers indicate that no activity has occurred for a predetermined period of time transparent to said at least one power-unaware application.</p>			
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Applicant notes that cross-reference to a similar aspect in another claim does not mean that that aspect or limitation is *identical*. Rather, applicant is pointing out that the aspects have similar arguments as to why the particular limitation in each claim was overlooked or provides a material limitation vis-à-vis an originally presented claim. Such  
5 claims have some differences and may be construed differently and may be subject to different arguments for other purposes, such as patentability, infringement, etc.

Additionally, applicant notes that despite the fact that applicant argues that particular aspects were “overlooked” within the meaning of the recapture doctrine,  
10 applicant maintains that one of skill in the art can recognize, from applicant’s disclosure as originally filed, that applicant was in possession of these inventions (and the Examiner appears to agree due to the lack of any such objection).

#### IV. Liberal Construction of Reissue Statute

15 It is to be borne in mind that the reissue statute explicitly allows for a broadening reissue and that statute is to be construed liberally as a matter of public policy. In re Weiler, 790 F.2d 1576 (Fed. Cir. 1986). The Examiner’s stance (that no claims without the “virtual device driver” limitation are allowable) flies in the face of the clear intent of the statute (allowing the coverage of inventions not properly claimed). While applicant  
20 appreciates the importance of public notice through prosecution history, the policy-based doctrine of recapture cannot completely trump the explicit language of 35 USC § 251, which allows a broadening reissue to be filed within two years of the issuance of a patent. If the Examiner’s interpretation of the recapture doctrine is sustained, the broadening

nature of the reissue statute will be almost entirely eviscerated because no broadening will be permitted unless the new reissue claims expressly contain the limitations that distinguished the invention originally claimed.

In this case, applicant set forth numerous inventive aspects relating to power  
5 management software, but they were not all claimed. A relatively straightforward prosecution history resulted: The Examiner pointed to one aspect that was not shown in the prior art, and the applicant accepted that aspect as one means to obtain a patent. Applicant's patent attorney at the time failed to realize the significance of other inventive aspects and saw a rapid and what appeared to be acceptable conclusion to the prosecution  
10 of the patent. All claims were drafted or amended to include this limitation, and the patent was allowed to issue.

Granted, that as a matter of fairness, applicant may not be allowed to back out a relied-upon limitation and to thereby return to the original claims by way of the reissue statute; however, it is unfair to preclude applicant from pursuing claims drawn to other  
15 inventive aspects of the original disclosure simply because they are somewhat related in subject matter to the original claims.

Case-law has wisely construed the reissue statute to allow such overlooked aspects to be pursued via reissue. Such overlooked aspects may be pursued despite the fact that a limitation used to gain allowance is not included in the different inventive  
20 aspect now claimed. Applicant submits that applicant's reissue claims are directed to such overlooked aspects, and respectfully requests allowance thereof.

## V. Claim Amendments

Applicant submits that all claims amendments put the claims in better condition  
5 for allowance and/or appeal. Applicant has included a mark-up copy of all amended  
claims as a courtesy in Appendix A. The amendments to independent claims 51, 64, 70  
and 73 broaden these claims. Previously, the claims did not recite the open-ended term  
comprising, and recent Federal Circuit cases indicate that reciting comprising may be  
important to ensure an open-ended interpretation of claims. Thus, these amended claims  
10 (and the claims dependent thereon) now clearly can include additional operations.

The amendment to claim 57 is also a broadening amendment which makes claim  
57 an independent claim and focuses on the configurability limitation argued with respect  
to claim 51 (removing some aspects).

The amendment to claim 63 also broadens that claim. It is now clear that claim  
15 63 only requires that the software lacks a permanent tie to one specific hardware devices,  
whereas some hardware devices in the system may have some permanent ties. In other  
words, the claim language does not preclude some devices from having permanent ties;  
however, at least one device must lack a permanent tie.

None of these amendments, however, should require further searching, and may  
20 appropriately be entered at this point.

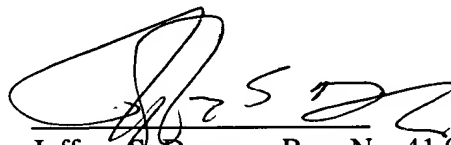


VI. Conclusion

Applicant submits that all claims now pending are in condition for allowance. Such action is earnestly solicited at the earliest possible date. If there is a deficiency in fees, please charge our Deposit Acct. No. 02-2666. Applicant invites a discussion of this reissue application if such discussion may be helpful, and the undersigned may be reached at 408-765-5935.

Respectfully submitted,

Date: 4/2/2001

  
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Appendix A: Mark-up Version of Claim Changes  
Since Applicant's Last Amendment

5

(Once Amended) An article comprising:

a machine readable storage medium storing instructions comprising a device  
manager and power management software, said power management  
software, if executed by a system, performs operations comprising said  
power management software:

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cooperates with said device manager to allow power management of a  
plurality of devices in the system which are configurable devices;  
and  
manages a power level for each of the plurality of devices in the  
system and is capable of placing one or more of said plurality of  
devices in a reduced power consumption state.

15

57. (Once Amended) [The article of claim 55 ]An article comprising:

a machine readable storage medium storing instructions comprising power

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management software, said instructions, if executed by a system cause said  
system to perform operations comprising:

allowing power management of a plurality of devices in the system  
which are configurable devices; and  
managing a power level for each of the plurality of devices in the  
system, said power management software being capable of

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placing one or more of said plurality of devices in a reduced  
power consumption state, wherein said power management  
software, if executed, provides support for idle detection for at  
least one of said plurality of devices.

5           63. (Once Amended) The article of claim 51 wherein said power management  
software performs power management for said plurality of devices and [therefore has  
no]lacks a permanent tie to [one]a specific hardware device in the system.

10           64. (Amended) An article comprising:  
  
a machine readable storage medium storing power management software  
  
which, if executed by a system, performs operations comprising said  
power management software:  
  
15           coordinates power management for a plurality of devices; and  
  
registers with a configuration manager to be notified of configuration  
  
changes for any of said plurality of devices.

            70. (Amended) An article comprising:  
  
20           a computer readable storage medium storing power management software  
  
comprising a power manager and additional software which is operating  
  
system software, the power management software, if executed by a  
  
computer, performs operations comprising said power management  
software:  
  
25           forms a part of a kernel level of an operating system for the computer;

cooperates with a device manager to allow power management of a plurality of system devices after reconfiguration of said plurality of system devices; and manages a power level of the computer.

5

73. (Twice Amended) An article comprising:

a computer readable medium storing a plurality of computer executable instructions including power management software and additional software to implement an operating system, the power management software, if executed by a computer system, operates in an operating system cooperative manner with said operating system at a kernel level which is a highest privilege level of the operating system, and causes the computer system to perform operations comprising:

10

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providing support for device idle detection for an input/output device in said computer system to determine when said input/output device has been inactive for a first duration, the first duration being a user configurable duration that may be varied based on desired power savings using a graphical user interface;

20

placing said input/output device in a reduced power consumption state if said input/output device has been inactive for the first duration; cooperating with a plug and play manager that, in cooperation with said power management software, allows power management of

said input/output device even though said input/output device is a  
plug and play configurable device;

providing support for system level power management by monitoring  
global events;

5 placing said computer system into one of a plurality of system level  
power management states as a part of system level power  
management implemented by said power management software,  
one of said plurality of system level power management states  
being a sleep state into which the computer system is placed due to  
10 the system remaining idle.